



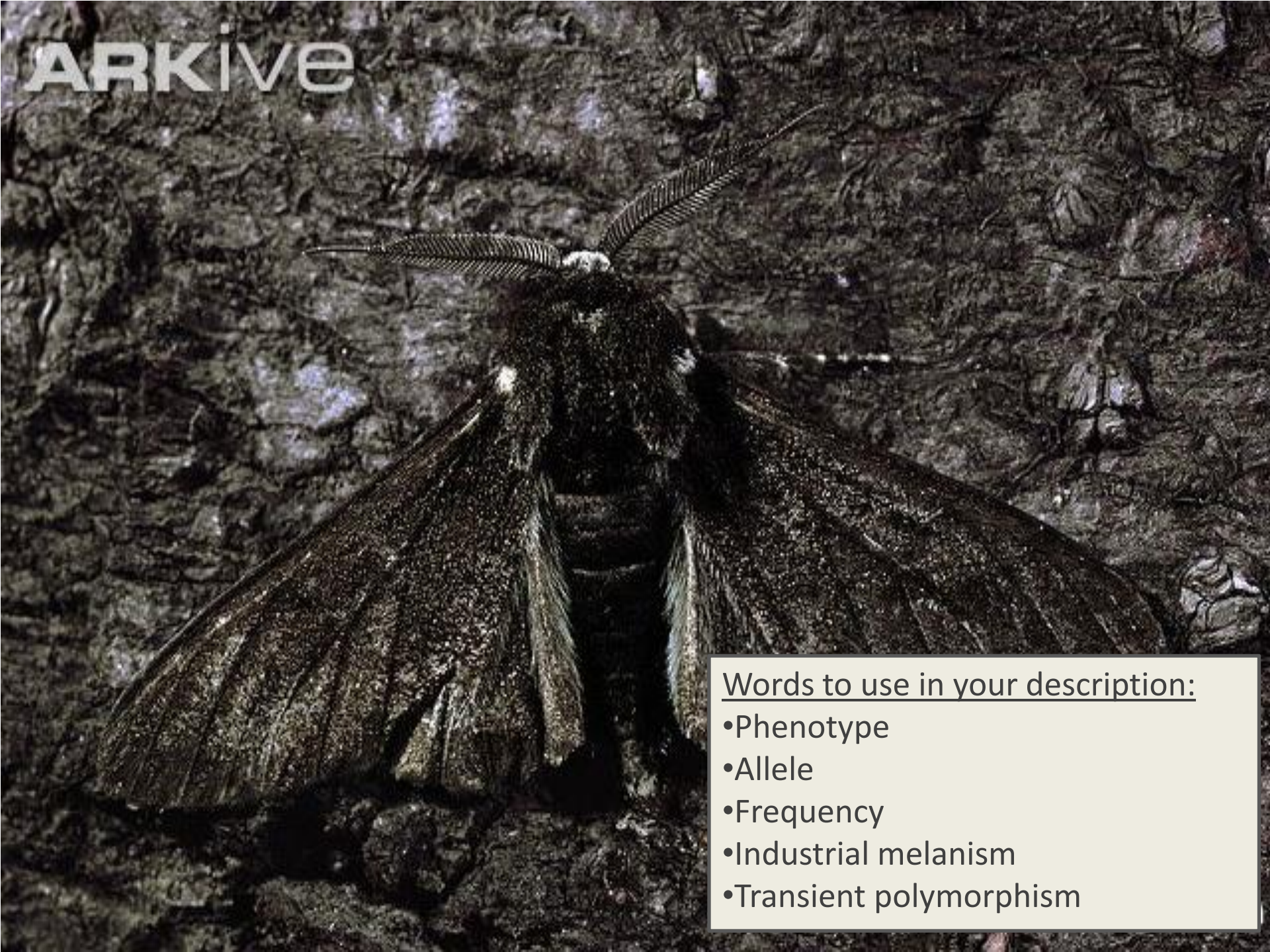
Words to use in your description:

- Phenotype
- Allele
- Frequency
- Predator
- Prey
- Polymorphism



Words to use in your description:

- Phenotype
- Allele
- Frequency
- Predator
- Camouflage



Words to use in your description:

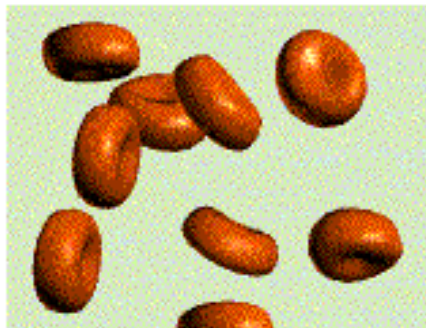
- Phenotype
- Allele
- Frequency
- Industrial melanism
- Transient polymorphism

Balanced Polymorphism

- Two alleles are maintained in stable equilibrium
- Heterozygote has selective advantage

Sickle Cell Disease

- Autosomal recessive
- Carrier
- Malaria
- Balanced polymorphism



AA

Susceptible to Malaria



Aa

Resistant to Malaria
but may have sickle
cell disease
occasionally

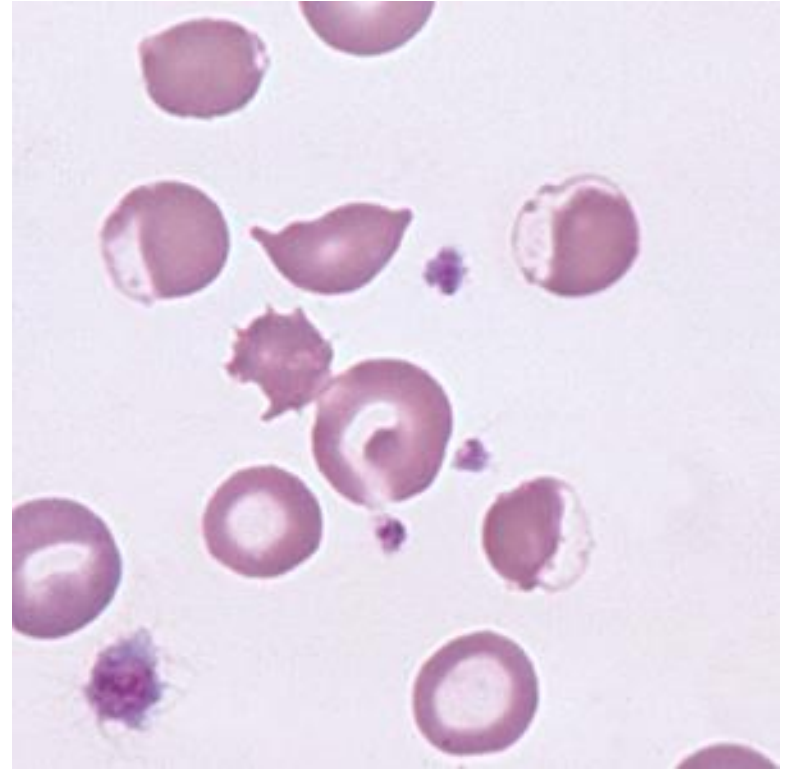


aa

Resistant to Malaria
but has fatal sickle
cell disease

Glucose-6-Phosphate Dehydrogenase Deficiency

- Sex linked
- Balanced polymorphism
- Heterozygous female
- Malaria

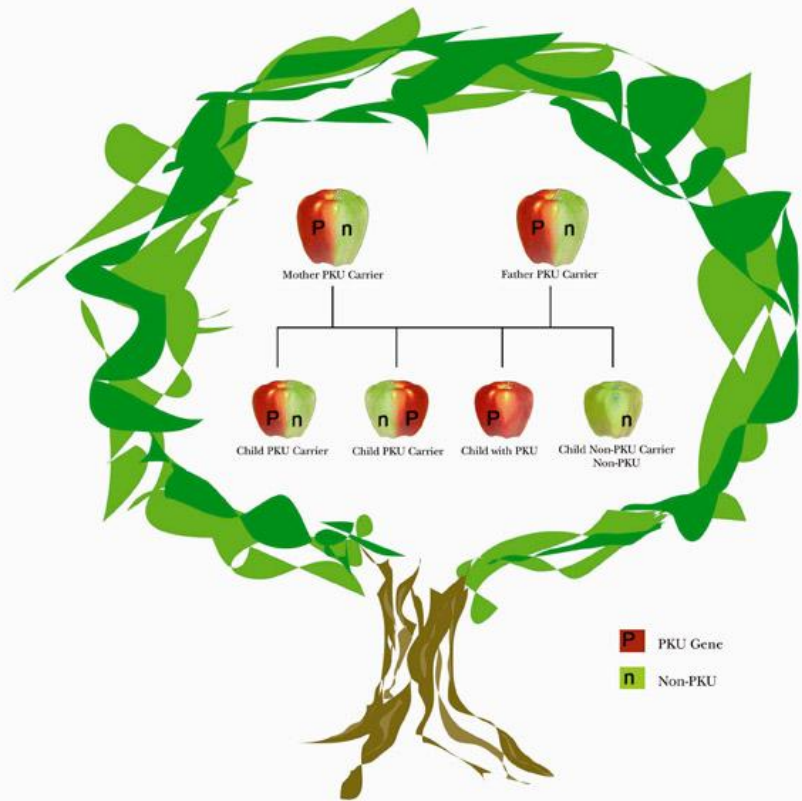


PKU

- Carrier
- Autosomal recessive
- Miscarriage
- Fungal toxin
- Heterozygote



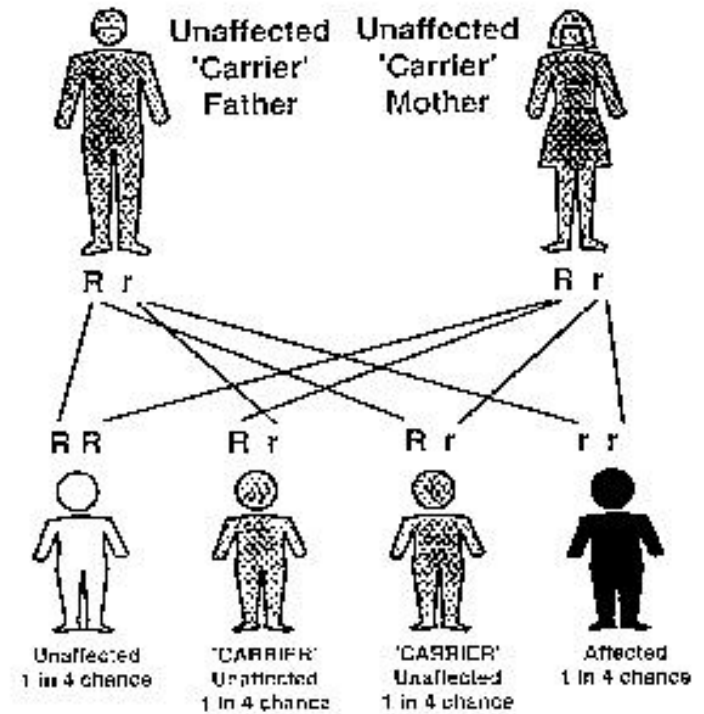
PKU INHERITANCE TREE



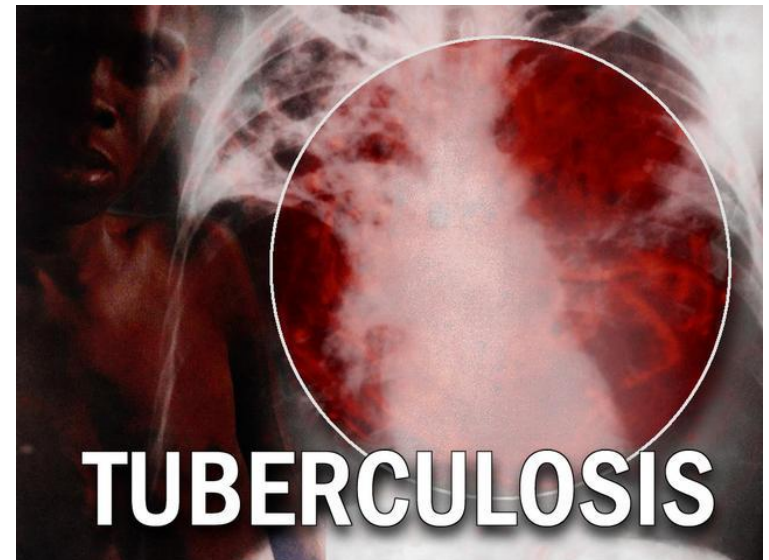
When both parents are carriers, they each have a 50% chance of passing on their non-working gene.
Possible outcomes : (A) non-carrier, non-PKU (25% chance), (B) carrier of PKU (50% chance), (C) affected with PKU (25% chance)

Tay-Sachs Disease

- Carrier
- Heterozygote advantage
- TB
- Tay-Sachs



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Heterozygote advantage in Tay-Sachs carriers?

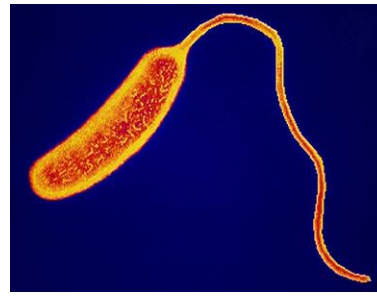
B Spyropoulos, P B Moens, J Davidson, and J A Lowden

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Abstract

Chi-square analyses of new data as well as data previously reported by Myriantopoulos have shown that grandparents of Tay-Sachs carriers die from proportionally the same causes as grandparents of noncarriers. It is unlikely that there is any advantage to being a Tay-Sachs carrier insofar as resistance to tuberculosis is concerned. Our results are further evidence to support Fraikor's claim that the high carrier frequency of the allele in Ashkenazi Jews is probably caused by a combination of founder effect, genetic drift, and differential immigration patterns.

Cystic Fibrosis



- Balanced polymorphism
- Cholera
- Channel
- Selective advantage



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